

IoTxx Insteon and X10 Messages/Commands

The following information is intended to aid in programming a PC application to support our IoT Input/Output devices. The comprehensive Insteon command set was established with and certified by SmartLabs to ensure interoperability and future expansion. Manufacturers of Insteon applications follow this command set to ensure maximum customer satisfaction with Insteon products. In the tables that follow, the column heading **SE DAB** denotes whether the command is Standard-length (S) or Extended-length (E), and whether it is a Direct (D), ALL-Link (A), or Broadcast (B) command. IoTxx assigned codes by SmartLabs are: DevCat: 0x07, SubDevCat: 0x02. **PLEASE NOTE YOUR SPECIFIC IoTxx MAY NOT SUPPORT ALL COMMANDS.**

Insteon Standard-Length Direct Messages/Commands

Command Name	SE DAB	Cmd 1	Cmd 2	Description	
Assign to ALL-Link Group	SD	0x01	0x00 - 0xFF Group Number	Used during Insteon device linking session. Assigns a status snapshot to an ALL-Link group.	
Delete from ALL-Link Group	SD	0x02	0x00 - 0xFF Group Number	Used during unlinking session. Deletes a status snapshot from an ALL-Link group.	
Product Data Request	SD	0x03	0x00	IoTxx responds with an Extended-length Product Data Response message.	
Enter Link Mode	SD	0x09	0x00 - 0xFF Group Number	Enters linking mode. Use to add links.	
Enter Unlink Mode	SD	0x0A	0x00 - 0xFF Group Number	Enters unlinking mode. Use to delete links.	
ID Request	SD	0x10	0x00	IoTxx first returns an ACK message, then it sends a <i>SET Button Pressed</i> Broadcast message, but it does not enter Linking Mode.	
Set Address MSB	SD	0x28	0x00—0xFF High byte of 16-bit address	Set Most-significant byte of EEPROM address for peek or poke. Set to 0x00 for access to IoTxx.	
Poke (see note 2)	SD	0x29	0x00 - 0xFF value of parameter to store	Puts the byte in Cmd 2 into the parameter RAM location pointed to by PARPTR.	
Peek (see note 1)	SD	0x2B	0x00 - 0xFF PARPTR value	Sets Cmd 2 value into PARPTR. Cmd 2 of the ACK message returns the byte pointed to PARPTR.	
Output ON	SD	45	0x00—0x07 Output number	Turn ON output specified in Cmd2	
Output OFF	SD	46	0x00—0x07 Output number	Turn OFF output specified in Cmd2	
Write Output Port	SD	0x48	0x00-0xFF Value to store on data register (only output bits are affected)	ACK Cmd2 byte contains the data byte as written to the output port	
Read Input Port	SD	0x49	0x00	ACK Cmd2 byte contains the data byte as read from the input port	
Get Sensor Value	SD	0x4A	0x00 - 0x03 Sensor Number	ACK contains sensor value in Command 2.	
Set Sensor 1 OFF -> ON Alarm	SD	0x4B	0x00—0xFF Alarm value	Set value for Sensor 1 to trigger an alarm when its state goes from OFF to ON.	
Set Sensor 1 ON -> OFF Alarm	SD	0x4C	0x00—0xFF Alarm value	Set value for Sensor 1 to trigger an alarm when its state goes from ON to OFF.	
Write Configuration Port	SD	0x4D	Bits 0:7 See Note 1	Configure IoTxx options. ACK Cmd2 byte contains the new Configuration byte (see Note 1.)	
Read Configuration Port	SD	0x4E	0x00	ACK Cmd2 byte contains the new Configuration byte.	
IoTxx Control	SD	0x4F	Subcommand		
			0x00	Load Initialization Values	Resets IoTxx to its factory default settings
			0x01	Update EEPROM	Load EEPROM from RAM Parameters
			0x02	Status Request	Return the Status of the Outputs in Cmd2 of ACK message
			0x05	Get Firmware Version	Reads device firmware version
			0x06	Get Output Timers	Read output timers values
			0x09	Enable status change message	Enables Output Port status change broadcast messages
			0x0A	Disable status change message	Disables Output Port status change broadcast messages
			0x0E	Diagnostics ON	Put unit in Diagnostics mode (cycle outputs 1 sec each)
			0x0F	Diagnostics OFF	Take unit out of Diagnostics mode

Insteon Extended-Length Direct Messages/Commands

Command Name	SE DAB	Cmd 1	Cmd 2	Description
Product Data Response	ED	0x03	0x00	Response to Standard-Length Product Data Request. See Note .
Set Sensor/Analog Alarms	ED	0x4B	0x00-0x03 Sensor / Analog Input Number	D1—D4 Alarm Values (2 bytes for S1-S4) or 4 bytes for AN1 - AN3
Set Output Timers	ED	0x4D	0x00	D1—D8 Timer Values
Get Output Timers Response	ED	0x4F	0x06	Response to Get Output Timers Request D1-D8 Output Timer Values

Insteon Standard-Length ALL-Link Messages/Commands

ALL-Link Activate	SA	0x11	0x00 - 0x0F Group number	Recall and activate ALL-Link state for number in Cmd 2
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Insteon Standard-Length Broadcast Messages/Commands

SET Button Pressed Slave	SB	0x01	None	Linking Mode as a Slave device
Status Changed	SB	0x27	IoTxx Output Port if "To Address = xx.yy.00 IoTxx Input Port if "To Address = xx.yy.01"	IoTxx will send this message when there is change of data in its output or input port. Cmd2 has the Output or Input status. The lower byte of the "To Address" in the message indicates if an output (00) or input (01) changed.

Notes:

1) IoTxx Configuration Port: This port determines how IoTxx responds to the various commands. The information in this port is encoded as shown on the right.	Bit 0—1:	00 = Analog Input is not used 01 = Analog Input used, convert on command 11 = Analog Input used, convert on fixed interval
	Bit 2:	If set (1): Send Broadcast on Sensor Alarm
	Bit 3:	If set (1): Debounce the inputs
	Bit 4:	If set (1): Enable 1-Wire port
	Bit 5:	If set (1): Timers are in seconds
	Bit 6:	If set (1): Enable broadcast of Output and Input port change
	Bit 7:	If set (1): Enable timers if greater than 0
2) IoTxx Memory Layout: The range of fixed (EEPROM) and volatile (RAM) locations accessible for Peek and Poke (if applicable) correspond to the map on the right. The "rw" notation indicates whether the location is read only ("r"), or both readable and writeable ("rw") when followed with the "RAM to EEPROM" command. Note that some locations are directly accessible with Standard Direct Commands. Also note that the MSB of the peek address must be first set to 0x00 for these locations to be accessible.	Address	Description (r: readable; w: writeable)
	0x00—0x07	Output Timers (rw)
	0x08	X10 House Code (rw)
	0x09	Configuration Port (rw)
	0x0A—0x11	Sensor 1-4 Alarms (4 X 2) (rw)
	0x12—0x19	Analog Inputs 1-2 Alarms (2 X 4) (rw)
	0x1A	Inputs to Outputs Crosslink bitmap (rw)
	0x1B-0x1F	Reserved (rw)
	0x20—3F	Group Command On/Off sequence for I1—I8 (rw)
	0x40—0x47	Group numbers for I1-I8 (rw)
	0x48	Firmware Version (r)
	0x49	EEPROM Loaded flag (r)
	0x4A	Output Port Status (r)
0x4B	Input Port Status (r)	
0x4C	Analog Data (2 X 2) (r)	
0x50	1-Wire raw data (r)	
0x58—0x5F	Input timers (rw)	

IoTxx X-10 Commands*

Command Name	UNIT	CMD	Description
Turn Output ON	1-8	ON	Turn Output in UNIT (1-8) ON
Turn Output OFF	1-8	OFF	Turn Output in UNIT (1-8) OFF
Enable Timers	16	ON	Enable Output Timers
Disable Timers	16	OFF	Disable Output Timers

* if X10 support is available